

of insular isolation, while *Pinus attenuata* seems to be of rather recent origin. It appears in middle Pleistocene, but not commonly, and becomes more abundant in the Recent.

Any hypothesis that is based upon the fossil record naturally rests upon fragmentary evidence. When new evidence is available changes must be made in our hypothesis to accommodate it. It seems, however, that in a region such as this, where Pleistocene deposits are relatively abundant and preservation is remarkably perfect, we now have most of the evidence that will bear upon the problem for this period. The evidence in hand suggests the relationships herein outlined. We need more material from the Pliocene and it seems that this will be forthcoming as that period is more completely studied. As the problem now stands we can say that Insular California, as it existed during the Pliocene, was the home of the closed-cone pines and that most of the differentiation that now characterizes that group took place during the Pleistocene.

Berkeley, California.

EXPLANATION OF PLATE I

- Fig. 1. *Pinus remorata* Mason. $X\frac{2}{3}$ Fossil cone from the Willow Creek formation of Santa Cruz Island. Pleistocene.
- Fig. 2. *Pinus radiata* Don. $X\frac{2}{3}$ Fossil cone from the Asphalt deposit near Carpinteria, California. Pleistocene.
- Fig. 3. *Pinus muricata* Don. $X\frac{2}{3}$ Fossil cone from the Asphalt deposit near Carpinteria, California. Pleistocene.
- Fig. 4. *Pinus Masoni* Dorf. $X\frac{2}{3}$ Fossil cone from the Merced sandstones $1\frac{1}{2}$ miles south of Fleishhacker Pool, San Francisco. Pliocene.
- Fig. 5. *Pinus linguiformis* sp. nov. fos. Mason. $X\frac{2}{3}$ Fossil cone from the Los Alamitos pump station of the Long Beach Water Works near Signal Hill, Los Angeles County. Pleistocene.

NOTES AND NEWS

Miss Harriet A. Walker, for many years an assistant in the Herbarium of the University of California and whose death was announced in this Journal for December, 1929, left property to the University of California valued at about \$4,000. The Board of Regents of the University of California have decided to preserve this legacy intact and to use it as an endowment for books for the Botanical Library. The income will enable the Department of Botany each year to purchase very desirable sets and single volumes in addition to those provided from regular University funds, and it is believed that because of Miss Walker's great interest in the Department this will more nearly meet her wishes than any other disposal that could be made of the legacy.—H. M. HALL.

Genetic researches upon the well-known *Collinsia bicolor* of our vernal flora are published in recent issues of the *Zeitschrift für Induktive und Abstammungs- und Vererbungslehre* (vol. 55, hefte 1-3). The author is the Norwegian botanist, Gunnar Hiorth.

NOTES AND NEWS

Mr. M. W. Talbot, who has for some ten years been engaged on weed control work in the United States Bureau of Plant Industry at Washington, has recently been transferred to the United States Forest Experiment Station at Berkeley. In California, as "Senior Forest Ecologist", he will have to do with the forage research connected with range lands.

In the course of a botanical reconnaissance, having to do with woody plants, Dr. R. W. Chaney, Professor of Paleontology in the University of California, reached Trinidad, West Indies, Jan. 2, 1932. He writes from Trinidad: "Each of the islands in the British West Indies I have found to be a botanical gem, with new fossil plant localities here and at Santa Lucia, both of critical interest." Thence he goes to British Guiana, afterwards flying to Caracas, Venezuela.

Dr. P. A. Munz, Professor of Botany in Pomona College, Claremont, returned early in January from Europe where he has been for a half-year engaged in research studies in systematic botany. He paid especial attention to Chilean and Argentinian Onagraceae, discovering interesting similarities to Californian species. He visited the herbaria at Edinburgh, London, Berlin, Prague, Geneva and Paris.

Dr. J. H. Faull, Professor of Botany in Harvard University, visited California in September, 1931, in connection with his studies on fungi.

Professor Geo. J. Peirce's "Experimental Plant Physiology" is a recently issued text of 166 pages designed to enlighten "the curious as to the qualities and operations of living organisms." The experiments do not involve highly elaborate apparatus, but only such simple instruments as will give accurate results. (Henry Holt & Co.)

A new journal of botany issued by Miss Alice Eastwood and Mr. J. T. Howell of the California Academy of Sciences Herbarium is entitled "Leaflets of Western Botany". The first number (January, 1932) contains an article on the cultivated *Pittosporums* in California by Miss Eastwood and an account of a new *Baeria*, *B. Bakeri*, from the Mendocino coast by Mr. Howell.

A recent issue of the Proceedings of the California Academy of Sciences (ser. 4, vol. 20, no. 5) contains an article by Miss Alice Eastwood on "New Species of Plants from Western America". These new species cover a wide range of families. In the same publication, nos. 3 and 4, are two articles by Mr. J. T. Howell, one on "The Genus *Pogogyne*", the other on "A Great Basin Species of *Physocarpus*".

Dr. W. S. Cooper of the University of Minnesota finds, on a visit to Glacier Bay, Alaska, that the Coast Hemlock (*Tsuga heterophylla*) and Mountain Hemlock (*Tsuga Mertensiana*) both layer, though the Sitka Spruce (*Picea Sitchensis*) does so more abundantly and vigorously. He discusses the matter of layering in these species in the Botanical Gazette for June, 1931 (91:441-451).